

## REMARKS

Claims 1-23 are pending. Reconsideration of the application in view of the following remarks is requested.

### I. The Rejection of Claims 1-23 under 35 U.S.C. 103(a)

Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maselli et al.<sup>1</sup>

The Examiner states that Maselli et al. disclose a process of forming breakfast cereals comprising mixing an alpha-amylase with cereal grains, cooking the cereal grains, tempering the grains, draining the grains and forming the grains into breakfast cereal shapes. The Examiner states that the enzymatic treatment may begin prior to cooking and the cooking is done to gelatinize the starch. The Examiner contends that Maselli et al. disclose all of the steps of the claims, alleging that the cooking step is the same as the claimed heating so as to gelatinize the starch. The Examiner contends that "[s]ince the cereal grains are treated with enzyme *[sic]* degrading enzyme and it is subjected to a holding period within the time frame claimed, it is inherent retrogradation of the starch takes place."

The Examiner further states that Kilibwa teaches that other enzymes, such as, maltogenic alpha-amylase and pullulanase, also act on starch to generate dextrans. The Examiner alleges that this reference shows that all the enzymes (alpha-amylase, maltogenic alpha amylase and pullulanase) have an equivalent function. The Examiner says it would have been obvious to use another enzyme which has the same function as that required by Maselli et al.

The rejection relies on the incorrect assumption that all of the enzymes (alpha-amylase, maltogenic alpha amylase and pullulanase) have an equivalent function and thus it would be obvious to substitute a maltogenic alpha amylase or pullulanase for the alpha-amylase of Kilibwa. Office Action at page 3. The equivalent function is that all of the enzymes "act on starch to generate dextrans." Id.

Alpha-amylases, maltogenic alpha amylases and pullulanases do not have equivalent functions. Alpha-amylases, maltogenic alpha-amylases and pullulanases are different enzymes which produce different end products by different enzymatic mechanisms. See, e.g., the EC classification submitted in the prior response illustrating that alpha-amylase and maltogenic alpha-amylase, e.g., are different enzymes which produce different end products. The same applies to

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<sup>1</sup> The obviousness rejection states that the claims are obvious over Maselli et al. The Examiner, however, subsequently also relies on Kilibwa. The Examiner is requested to clarify if the rejection is Maselli et al. in view of Kilibwa or if the Examiner is just relying on Maselli et al.

pullulanases. In this regard, although the enzymes form "dextrins" in general, the resulting products are not the same as "dextrins" encompass a large number of starch degradation products.

However, the fact that these enzymes produce "dextrins" does not create a sufficient motivation or suggestion which would lead a skilled artisan to substitute a maltogenic alpha-amylases and pullulanases for the enzyme of Maselli et al. In fact, it is not seen how the ability to form "dextrins" predicts whether the enzymes are suitable for use in accelerating starch retrogradation. In this regard, the Examiner has not explained why the ability to form "dextrins" results in the ability to accelerate starch retrogradation.

Moreover, Kilibwa is cited for providing the alleged motivation to use the maltogenic alpha-amylase and pullulanase to effect starch retrogradation, however, Kilibwa discloses that these enzymes are actually useful as anti-staling agents—that is, the enzymes are useful in inhibiting starch retrogradation. See Kilibwa, e.g., at col. 2, lines 7-12. Maltogenic alpha-amylases, e.g., are especially well known in the art for use as anti-staling agents to prevent starch retrogradation. See, e.g., US Patent No. RE 38,507. Clearly, Kilibwa's teaching that the enzymes are useful as anti-staling agents in preventing starch retrogradation (along with the general knowledge in the art as evidenced by RE 38,507) does not then motivate an artisan to use the same enzymes to promote the opposite effect of accelerating starch retrogradation. Thus, Kilibwa is not relevant prior art and does not provide a motivation to use the enzymes to accelerate starch retrogradation.

For the foregoing reasons, Applicants submit that the claims overcome this rejection under 35 U.S.C. 103. Applicants respectfully request reconsideration and withdrawal of the rejection.

## II. Conclusion

In view of the above, it is respectfully submitted that all claims are in condition for allowance. Early action to that end is respectfully requested. The Examiner is hereby invited to contact the undersigned by telephone if there are any questions concerning this amendment or application.

Respectfully submitted,

  
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